

What is claimed is:

1. An aircraft controller-pilot data link communications module comprising:

a multi-line display that visually presents a list of CPDLC messages which can be scrolled to display any portion of the list of messages, wherein the list of messages can be scrolled from a top of the display to a bottom of the display such that the most recent message presented is located at the top of the display or scrolled from the bottom of the display to the top of the display such that the most recent message presented is located at the bottom of the display.

2. The module of claim 1 wherein one or more of the displayed messages include an indicator that indicates whether the message was an uplink message or a downlink message.

3. The module of claim 1 wherein the display presents a direction arrow that indicates scrolling direction of the list of uplink and downlink messages.

4. An aircraft controller-pilot data link communications module comprising a display that visually presents a list of uplink messages wherein a displayed uplink message includes a response tag that identifies a selected response to the uplink message.

5. The module of claim 4 wherein the tag comprises a letter of the alphabet corresponding to the selected response.

6. The module of claim 4 wherein the tag is included in the displayed uplink message if and only if the selected response was sent by the module.

7. An aircraft controller-pilot data link communications module comprising a display that, when an uplink message is received, displays identifiers for one or more possible responses appropriate to the uplink message and does not display identifiers of other possible responses appropriate to other possible uplink messages.

8. The module of claim 7 wherein the module also enunciates one or more aural identifiers of the one or more possible responses appropriate to the uplink message.
9. An aircraft controller-pilot data link communications module for handling CPDLC messages, comprising:
- 5 a memory containing a plurality of digital audio data strings; and
- a digital audio enunciator circuit that plays out a string of digital audio data from the memory corresponding to a CPDLC message selected from a plurality CPDLC messages.
- 10 10. The module of claim 9 wherein the digital audio data strings include digital audio voice data.
11. The module of claim 9 wherein the module plays out the corresponding audio data when the module receives a CPDLC message.
12. The module of claim 9 wherein the module plays out the corresponding audio data when the module transmits a CPDLC message.
- 15 13. The module of claim 9 wherein a string of digital audio data corresponds to a request to confirm a response to an uplink message, and wherein the module plays out said string of audio data before the module transmits the response.
14. The module of claim 11 wherein the play out of audio data can be selectively turned on or off.
- 20 15. The module of claim 10 wherein the digital audio voice data is synthesized.
16. The module of claim 10 wherein the digital audio voice data is pre-recorded.
17. The module of claim 9 wherein an aural sound sounds when the module receives an uplink message and a different aural sound sounds to confirm transmission of a response before the module transmits the response.
- 25 18. An aircraft controller-pilot data link communications module for handling CPDLC messages, comprising:

an audio input that receives spoken audio voice data; and

a speech recognition component that identifies commands in the spoken audio voice data.

19. The module of claim 18 wherein the speech recognition component uses an identifier of a current state of the module to facilitate identifying a spoken command.

20. The module of claim 19 wherein a first aural sound sounds when the speech recognition component identifies a command in the audio voice data that is included in a set of possible commands associated with the identifier of a current state of the module, and a second aural sound sounds when the speech recognition component identifies a command in the audio voice data that is not included in the set of possible commands associated with the identifier of a current state.

21. An aircraft controller-pilot data link communications module comprising:

a memory storing a checklist corresponding to an uplink message and a possible response to the uplink message; and

a display that, when a user confirms the possible response to the uplink message, automatically displays the checklist.

22. The module of claim 21 wherein the module enunciates the checklist aurally.

23. The module of claim 21 wherein the displayed checklist can be scrolled to present any portion of the checklist.

24. The module of claim 21 wherein the uplink message is distinguished from other uplink messages that are not associated with a checklist by a tag that is received with the uplink message.

25. An aircraft controller-pilot data link communications module comprising:

one or more programmable buttons to input data into the module and a display that visually presents a label corresponding to each

programmable button, wherein the label indicates the function of the corresponding programmable button;

for a given button, two or more functions can be performed by the button and the function that will be performed if the button is pressed at a particular time is indicated by the label associated with the button at that time; and

wherein CPDLC messages can be displayed and selected and, when a CPDLC message is selected, the one or more programmable buttons are automatically programmed to receive input that is appropriate to the content of the selected message and the labels automatically and correspondingly change to indicate the function of the corresponding programmable button.

26. An aircraft controller-pilot data link communications module comprising:  
a display that visually presents a list of possible CPDLC response messages to an uplink message; and  
a knob operable by a user to confirm selection of a possible response.

27. The module of claim 26 wherein the knob can be pushed for less than a predetermined duration to advance by one message through the list of possible response messages to select a possible message and that can be pushed for the predetermined duration or longer to confirm selection of a possible response message.

28. The module of claim 27 wherein, if the module has received a plurality of uplink messages, a first press of the knob for less than the pre-determined duration causes the display to present the most recent uplink message and possible response messages to the uplink message.

29. The module of claim 27 wherein the predetermined duration is adjustable.

30. The module of claim 26 wherein the knob can be rotated to scroll through a list of received uplink messages.

31. The module of claim 26 wherein the knob can be rotated to scroll through a list of possible data values to be input to the module.

32. A method in a controller-pilot data link communications module for selecting and confirming a response to an uplink message, comprising:

5           receiving an uplink message requiring a response;  
visually presenting one or more possible responses appropriate to the content of the uplink message;  
receiving from a user a selection of a response from the one or more possible responses presented; and  
10          receiving from a user a confirmation of the selected response before issuing the response.

33. The method of claim 32 wherein the confirmation of the selected response is received when a knob is pushed for a predetermined duration or longer.

15          34. The method of claim 33 wherein, when the knob is pushed for less than the predetermined duration, the selection advances from one possible response to another.

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